

App. No. 10/523,102
Office Action Dated October 18, 2005

REMARKS

Reconsideration is respectfully requested in view of the above amendments and following remarks. The abstract has been amended editorially, taking the issue noted in the Office Action into account. Claims 1, 9, 10, 11, 12, 14 and 17 have been amended. The limitation in claim 1 concerning stabilizing the dielectric layer is supported for example by page 3, lines 8-11. The limitation in claim 14 concerning the step of forming the anode to contain manganese for stabilizing the dielectric layer is supported for example by page 8, lines 16-24. The limitation in claim 17 concerning oxidizing in a vapor-phase atmosphere containing manganese is supported for example by previous claim 19 and page 8, lines 8-10. Claims 9-12 have been amended editorially. Claims 18-19 have been canceled without prejudice or disclaimer. Claim 21 is new. Claim 21 includes features of original claim 6, which was indicated to be allowable. Claims 1-17 and 20-21 are pending.

Claim rejections - 35 U.S.C. § 102

Claims 1, 3, 4, 7, 8, 9 and 10 are rejected under 35 USC 102(b) as being anticipated by JP 2000188241 (Yoshida et al.). Applicants respectfully traverse this rejection.

Claim 1 requires the anode with niobium as its main component. Claim 1 further requires the anode to contain manganese. By providing a capacitor with an anode containing manganese, the number of oxygen atoms bonded to niobium are kept constant, and thus, niobium oxides are stabilized. On the other hand, when manganese is not present in the anode, characteristics of the capacitor vary in accordance with the influence of heat or applied voltage.

The effects of claim 1 are demonstrated in experiments depicted in Figs. 2-3 and the results shown in Figs. 4, 6 and 7. Briefly, two capacitors were formed by DC sputtering on an

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ordinary glass substrate supporting two conductors, as depicted in Figs. 2-3. One capacitor was formed with a mixture of niobium and manganese, and another capacitor was formed with niobium alone. Dielectric layers were then formed over the conductors by anodic oxidation. As shown in Fig. 4, hardly any capacity changes were observed for the capacitor formed with a mixture of niobium and manganese. Further, as shown in Figs. 6 and 7, when the manganese concentration was increased, the rate of capacitance change became smaller.

Yoshida et al. disclose a formation of a dielectric layer by anodic oxidation of an anode using an aqueous solution of phosphoric acid containing KMnO_4 (0022). However, as shown in Fig. 1 of Yoshida et al., manganese is contained in the crystalline oxide and its grain boundary, which is formed inside the dielectric layer, not in the anode. Therefore, the reference does not anticipate claim 1. Further, Yoshida et al. indicates that their invention is intended to reduce current leakage, but there is no suggestion by Yoshida et al. that providing an anode with manganese will stabilize capacity changes. Therefore, claim 1 is patentable over Yoshida et al.

Claims 3, 4, 7, 8, 9 and 10 depend from claim 1. Claims 3, 4, 7, 8, 9 and 10 are patentable over Yoshida et al. for at least the same reasons as claim 1.

Favorable reconsideration and withdrawal of the rejection are respectfully requested.

Claim rejections - 35 U.S.C. § 103

Claims 2, 5, 11, 12, 13, 14, 15, 16, 17 and 20 are rejected under 35 USC 103(a) as being unpatentable over JP 2000188241 (Yoshida et al.). Applicants respectfully traverse this rejection.

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Claim 1 has been argued as patentable over Yoshida et al. above. Claims 2, 5, 11, 12 and 13 depend from claim 1. Claims 2, 5, 11, 12, and 13 are patentable over Yoshida et al. for at least the same reasons as claim 1.

Claim 14 is an independent method claim generally corresponding to the features of claim 1. Therefore, claim 14 is patentable over Yoshida et al. for at least the same reasons as claim 1.

Claims 15 and 16 depend from claim 14. Claims 15 and 16 are patentable over Yoshida et al. for at least the same reasons as claim 14.

Claim 17 has been amended to incorporate the limitation of claim 19, which was not rejected. Thus, the rejection is rendered moot. Applicants do not concede the correctness of the rejection.


Claim 20 depends from claim 17. Claim 17 is patentable over Yoshida et al. for at least the same reasons as claim 17.

Favorable reconsideration and withdrawal of the rejection are respectfully requested.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions or concerns regarding this communication can be directed to the attorney-of-record, Douglas P. Mueller, Reg. No. 30,300, at (612) 455.3804.

Respectfully Submitted,

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